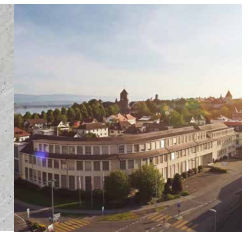


# PCD3.W615

Analog output module, 4 channels, 10 bit, 0...20 mA, galvanic isolation to the CPU



Fast output module with electrical isolation from the CPU for use with 4 channels each with 0...20 mA voltage and 10 bit resolution.

Use of a fast on-board micro controller allows decoupling and relief of the CPU regarding intensive computing tasks, such as scaling and filtering of signal data.



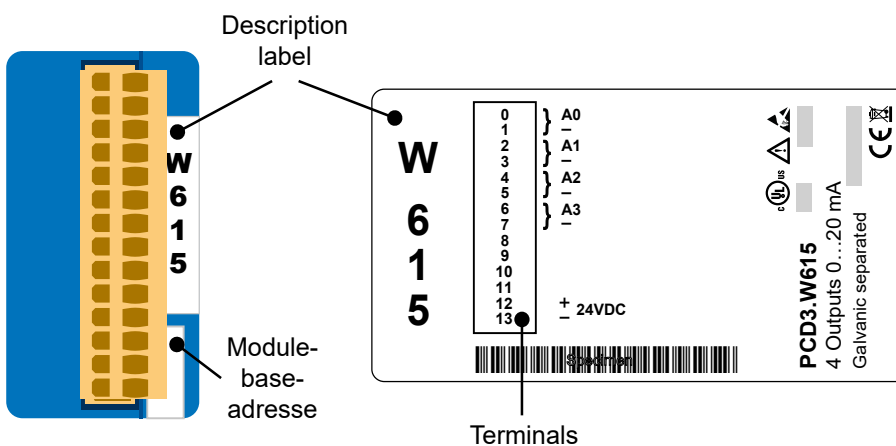
PCD3.W615

Technical data	
Number of outputs (channels)	4
Output range	Current 0...20 mA
Resolution (digital representation)	10 bit (0...1023)
Resolution	20 $\mu$ A
Galvanic separation	500 V, electrical isolation of outputs to CPU, channels themselves not separated
Short circuit protection	yes (permanent)
Time constant of output filter	typ. 0.3 ms
Load resistance	<500 $\Omega$ *
Cut off frequency	300 Hz
Accuracy at 25 °C)	$\pm$ 0.7 %
Temperature error (over temperature range 0...+55 °C)	$\pm$ 0.25 %, 100 ppm/K or 0.01 %/K
Internal current consumption (from +5 V bus)	max. 55 mA (typ. 45 mA)
Internal current consumption (from V+ bus)	max. 90 mA, smoothed Voltage range*
EMC protection, according to standards	ENV 50 141, EN 55 022, EN 61000-4-2, EN 61000-4-4, EN 61000-4-5

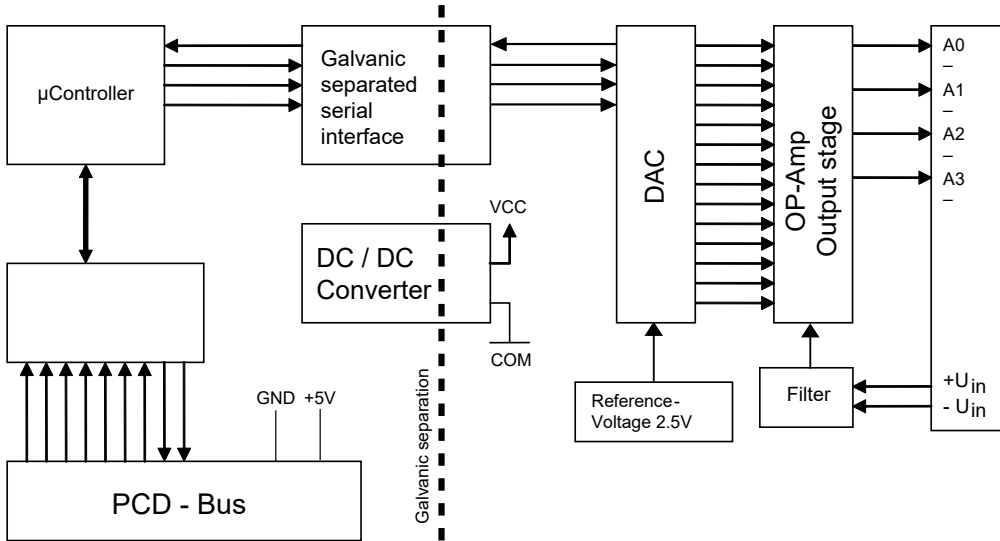
Technical data	
Terminals	Pluggable 14-pole spring terminal block type E (4 405 4998 0) for $\varnothing$ up to 1.5 mm <sup>2</sup>





\* Voltage range RL=20 mA + 10...20 V  
 Example: RL = 500  $\Omega$  Ue = 20...30 V  
 RL = 0  $\Omega$  Ue = 10...20 V

## Indicators and connections



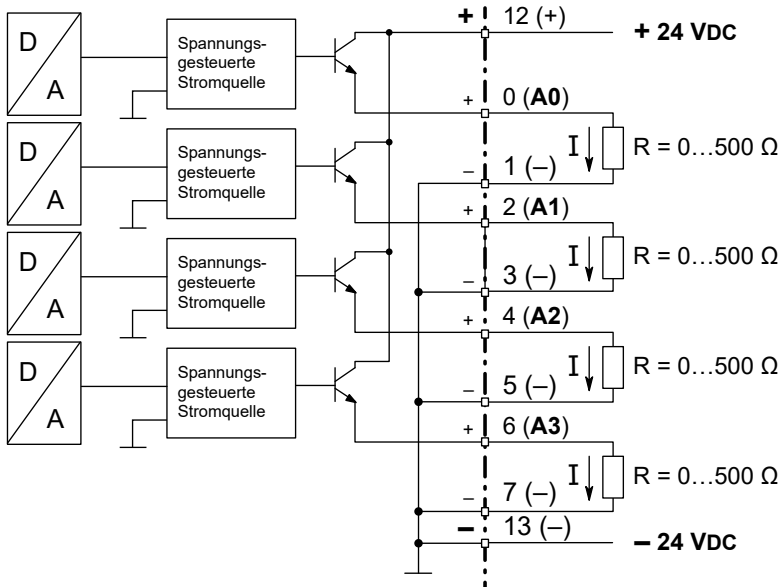
### Block diagram



	Galvanic separation of outputs to CPU, channels themselves not separated.
	I/O modules and I/O terminal blocks may only be plugged in and removed when the CPU and the external +24V are disconnected from the power supply.
	Watchdog This module can be used on all base addresses, there is no interaction with the watchdog on the CPUs.
	Further information This can be found in the Manual "27-600_I/O-modules for PCD1 / PCD2 series and for PCD3".

### Principle diagram of analog outputs

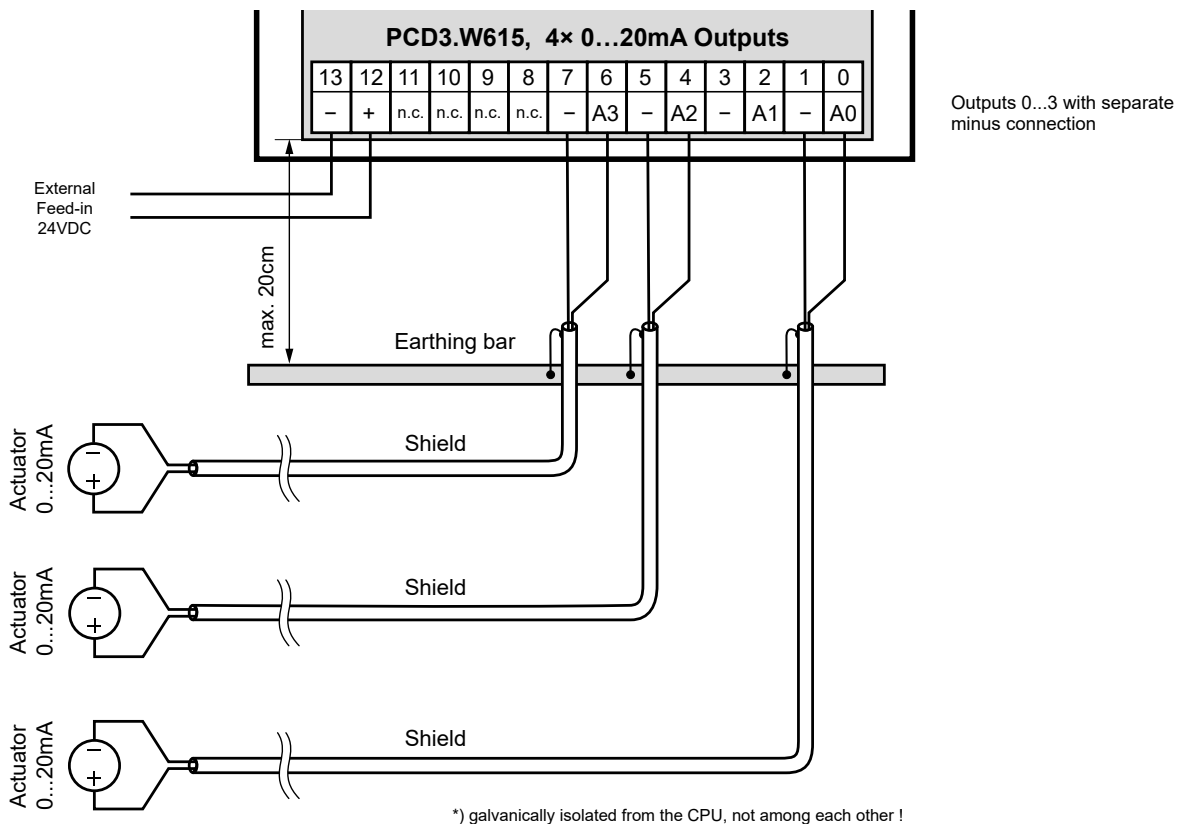
#### Output for 0...20 mA



## Connection concept (example)

The input signals are connected directly to the 14-pin terminal block. In order to couple as little interference as possible to the module via the lines, the connection should be made according to the principle explained below.

### Connection for 0 ...20 mA



## Notes on the output range

Balancing the offset and the amplification is done for the PCD3.W615 digitally by the  $\mu$ C. As there is no potentiometer, the output range has been slightly enlarged to cover maximum values even in the worst case.

Typical output range (without component tolerances):

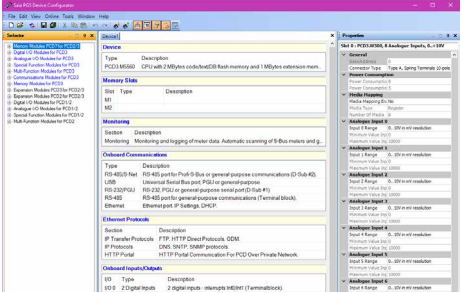
0 mA ... +21.4 mA (instead 0 ...+ 20 mA)

This range is broken down on a 10 bit scale (1024 steps), as before.

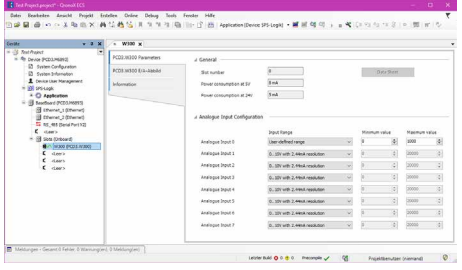
The result is the following LSB resolution: 1 LSB = 21.7  $\mu$ A

# Configuration

Saia PG5®

PCD-System	Evaluation
<b>Classic</b>	<p>The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator or Network Configurator).</p> 
<b>Alternatively</b>	<p>An FBox "PCD3.W6x5" exists for outputs.</p> <p>FBox for PCD3.W6x5 (outputs 0...3 selectable)</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; padding: 5px; width: 100px;"> <p>PCD3.W6x5</p> <p>out0</p> <p>out1</p> <p>out2</p> <p>out3</p> <p>Add O64</p> </div> <div style="border: 1px solid black; padding: 5px; width: 100px;"> <p>PCD3.W6x5</p> <p>out0</p> <p>Add O64</p> </div> </div>

Saia PCD® QronoX ECS

PCD-System	Evaluation
<b>IEC-Controller</b>	<p>The evaluation is performed by the firmware. It reads the values according to the configuration (Device Configurator)</p> 

**ATTENTION**

These devices must only be installed by a professional electrician, otherwise there is the risk of fire or the risk of an electric shock.

**WARNING**

Product is not intended to be used in safety critical applications, using it in safety critical applications is unsafe.

**WARNING - SAFETY**

The unit is not suitable for the explosion-proof areas and the areas of use excluded in EN 61010 Part 1.

**WARNING - SAFETY**

Check compliance with nominal voltage before commissioning the device (see type label). Check that connection cables are free from damage and that, when wiring up the device, they are not connected to voltage. Do not use a damaged device !

**NOTE**

In order to avoid moisture in the device due to condensate build-up, acclimatise the device at room temperature for about half an hour before connecting.

**CLEANING**

The device can be cleaned in dead state with a dry cloth or cloth soaked in soap solution. Do not use caustic or solvent-containing substances for cleaning.

**MAINTENANCE**

These devices are maintenance-free.  
If damaged during, no repairs should be undertaken by the user.

**GUARANTEE**

Opening the module invalidates the guarantee.



Observe this instructions (data sheet) and keep them in a safe place.  
Pass on the instructions (data sheet) to any future user.

**WEEE Directive 2012/19/EC Waste Electrical and Electronic Equipment directive**

The product should not be disposed of with other household waste. Check for the nearest authorized collection centers or authorized recyclers. The correct disposal of end-of-life equipment will help prevent potential negative consequences for the environment and human health.



EAC Mark of Conformity for Machinery Exports to Russia, Kazakhstan or Belarus.



PCD3.W615



4 405 4998 0

### Ordering information

Type	Short description	Description	Weight
PCD3.W615	4 outputs 10 bit, electrically isolated, 0...20 mA	Analogue output module with galvanic isolation, 4 channels, 10 bits, 0...20 mA, connector type E (4 405 4998 0) included	100 g

### Ordering information Accessories

Type	Short description	Description	Weight
4 405 4998 0	Plug-in, E	Plug-in I/O spring terminal block, 14-pole up to 1.5 mm <sup>2</sup> , labelled 0 to 13	13 g

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